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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/560,605	03/23/2006	Anil Kumar Tyagi	11378.0066USWO	9160

23552 7590 04/13/2010

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EXAMINER	
JOHANNSEN, DIANA B	

ART UNIT	PAPER NUMBER
1634	

MAIL DATE	DELIVERY MODE
04/13/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/560,605	TYAGI ET AL.	
	Examiner	Art Unit	
	Diana B. Johannsen	1634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 January 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) *5,6,12,17,19,23 and 28* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *3,4,7,8,11,13-16,18,20-22 and 24-27* is/are rejected.

7)☒ Claim(s) *1-4,7-10,13-16,18,20-22 and 24-26* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 December 2005* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This application is a 371 of PCT/IN04/00203, filed July 9, 2004 (and claiming foreign priority benefit of 882/DEL/2003 [India], filed July 9, 2003). The international search report and international preliminary report on patentability for the PCT application have been received and considered.

2. The listing of references in the Search Report is not considered to be an information disclosure statement (IDS) complying with 37 CFR 1.98. 37 CFR 1.98(a)(2) requires a legible copy of: (1) each foreign patent; (2) each publication or that portion which caused it to be listed; (3) for each cited pending U.S. application, the application specification including claims, and any drawing of the application, or that portion of the application which caused it to be listed including any claims directed to that portion, unless the cited pending U.S. application is stored in the Image File Wrapper (IFW) system; and (4) all other information, or that portion which caused it to be listed. In addition, each IDS must include a list of all patents, publications, applications, or other information submitted for consideration by the Office (see 37 CFR 1.98(a)(1) and (b)), and MPEP § 609.04(a), subsection I. states, "the list ... must be submitted on a separate paper." Therefore, the references cited in the Search Report (**other than those cited herein and previously by the examiner**) have not been considered. Applicant is advised that the date of submission of any item of information or any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the IDS, including all "statement" requirements of 37 CFR 1.97(e). See MPEP § 609.05(a).

Election/Restrictions

3. Applicant's election with traverse of Group I in the reply filed on January 18, 2010 is acknowledged. The traversal is on the ground(s) that "it would not be unduly burdensome for the Examiner to search and examine all the claims". This is not found persuasive because search burden is not an applicable criterion in a 371 application. Groups I-II lack unity of invention with one another for the reasons given in the Election/Restriction requirement mailed December16, 2009 (which reasons were not addressed in the traversal). Accordingly, applicant's arguments are not persuasive.

The requirement is still deemed proper and is therefore made FINAL.

4. Claims 5-6, 12, 17, 19, 23, and 28, as well as those embodiments of claims 1-2, 13-15, 20-21, and 24-26 directed to mptpB nucleic acids (including SEQ ID NOS 16, 12, 14, "pAK B" and the primers of SEQ ID NOS 5-8) and the use thereof, are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on January 18, 2010. It is again noted that claims 5-6 were included in Group II for the reasons given in the Election/Restriction mailed December 16, 2009; as applicant did not traverse this grouping of the claims, it is considered correct and has been maintained.

Claim interpretation

5. It is noted that the term "bearing" (see, e.g., claims 1, 3, 11, 13) is not defined in the specification. Accordingly, the term is given its broadest reasonable interpretation

consisted with its use in the specification and claims. The term "bearing" as used in the claims is therefore considered synonymous with the terms "having"/"comprising".

6. Regarding claim 2, the language “A strain as claimed in claim 1” is interpreted as requiring a mutant strain of mycobacterium as set forth in claim 1; the claim is further interpreted as requiring a mutant strain of either the species *M. tuberculosis* or *M. bovis* that contains the modified tyrosine phosphatase gene set forth in claim 1.

7. Regarding dependent claim 4, the reference to “A vector as claimed in claim 3” is interpreted as requiring a recombinant vector as set forth in claim 3 that comprises SEQ ID NO: 15 (particularly because the vector “pAK A” as described in the specification is clearly a recombinant vector that includes this sequence). However, as other dependent claims specifically reference a “recombinant vector”, applicant may wish to consider amending claim 4 such that it is consistent with other dependent claims.

Claim Objections

8. Claims 1-3, 7-8, 13-16, 18, 20-22, and 24-26 are objected to because of the following informalities: the claims embrace non-elected subject matter. Note the recitation in claims 1, 7, and 13 of “mptpB”, and of non-elected primers in claim 15. (Regarding independent claim 3, the claim is objected to because it embraces the embodiments of dependent claims 7-8). Appropriate correction is required.

9. Claims 3-4, 13 and 22 are objected to because of the following informalities: claims 4 and 22 recite “pAK A” when it appears the claims are intended to reference "pAKΔA". (This objection applies to claim 3 to the extent that it is drawn to the

embodiment of claim 4, and claim 13 to the extent that it is drawn to the embodiment of claim 22). Appropriate correction is required.

10. Claims 9-10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. See discussion below under the heading "Allowable Subject Matter".

11. Claims 13-16, 18, 20-22, and 24-26 are objected to because of the following informalities in independent claim 13: a) the word "selected' is misspelled "sleeted" in step f; step h recites "to obtain into a" rather than "into a" or "to obtain a"; step j ends in a period (although it is not the last step of the claim). Appropriate correction is required.

12. Claim 18 is objected to because of the following informalities: the claim recites "wherein step (b)" rather than "wherein in step (b)". Appropriate correction is required.

Claim Rejections - 35 USC § 112, first paragraph

13. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

14. Claims 3-4, 13 and 22 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

There are many factors to be considered when determining whether there is sufficient evidence to support a determination that a disclosure does not satisfy the enablement requirement and whether any necessary experimentation is "undue." These factors include, but are not limited to: (A) the breadth of the claims; (B) the nature of the invention; (C) the state of the prior art; (D) the level of one of ordinary skill; (E) the level of predictability in the art; (F) the amount of direction provided by the inventor; (G) the existence of working examples; and (H) the quantity of experimentation needed to make or use the invention based on the content of the disclosure. *In re Wands*, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988) (*MPEP* 2164.01(a)). It is noted that the examiner has considered all of the evidence related to each of these factors, and that those factors, reasons and evidence that have led to a conclusion that enablement is lacking are discussed below (*MPEP* 2164.04). **This rejection can be overcome by providing a deposit for patent purposes of vector "pAKΔA".**

Claim 4 is drawn to, and claim 3 embraces, a vector that "is pAK A". Claim 22 also recites (and claim 13 embraces) the vector "pAK A". It is noted that this rejection applies to independent claims 3 and 13 to the extent that they are drawn to the embodiments of claims 4 and 22, respectively. It is also noted that the recitation "pAK A" is interpreted as referencing the vector "pAKΔA".

It is unpredictable as to whether one of skill in the relevant art could actually make and use the invention of the instant claims. The claims require the vector "pAKΔA". The specification describes the construction of the vector at pages 12-13, and provides a disclosure of the mptpA gene contained in the vector (SEQ ID NO: 15;

see page 15). However, the full sequence/structure of the final vector is not disclosed in the specification. While the guidance provided in the specification is quite detailed, the description of construction of the vector provided in the specification is not sufficiently detailed to allow one of skill in the art to arrive at or produce the exact same construct recited in the claims by following the guidance/instruction of the specification. Accordingly, the guidance provided in the specification does not enable the construction of the specific vector "pAKΔA". Additionally, as "pAKΔA" was a recombinant vector first prepared by applicants, neither the vector itself nor, e.g., a cell line or bacterial strain including the vector would be expected to have been publicly available at the time the invention was made. Given that the exact sequence/structure of the claimed vector is not disclosed in the specification and/or the prior art, no quantity of experimentation would be sufficient to allow one of skill in the relevant art to produce this precise vector; such a type and quantity of experimentation is clearly undue. Accordingly, a suitable deposit for patent purposes is required to enable the claimed invention. In the event that the deposit is/was made after the effective filing date of the application, Applicant must provide a statement to corroborate that the deposited material is the material specifically identified in the application (see MPEP 2406.02).

If Applicants deposit with an International Deposit Authority is made under the Budapest Treaty, the specification should be amended to recite that the deposit has been made under the Budapest Treaty and to include the deposit accession number, the date of the deposit and the name and address of the depository. For further

information concerning deposit practice, Applicants attention is directed to 37 CFR 1.801-1.809 and MPEP 2401-2411.05.

If Applicants deposit with an International Deposit Authority is not made under the Budapest Treaty, then in order to certify that the deposit meets the criteria set forth in 37 CFR 1.801-1.809, Applicant may provide assurance of compliance by an affidavit or declaration, or by a statement by an attorney of record over his or her signature and registration number, showing that:

(A) During the pendency of this application, access to the invention will be afforded to the Commissioner upon request;

(B) All restrictions upon availability to the public will be irrevocably removed upon granting of the patent;

(C) The deposits will be maintained in a public depository for a period of 30 years or 5 years after the last request or for the effective life of the patent, whichever is longer;

(D) The deposits were viable at the time of deposit;

and;

(E) The deposits will be replaced if they should ever become non-viable.

Claim Rejections - 35 USC § 112, second paragraph

15. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

16. Claims 3-4, 7-8, 11, 13-16, 18, 20-22, and 24-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 is drawn to, and claim 3 embraces, a vector that "is pAK A". Claim 22 also recites (and claim 13 embraces) the vector "pAK A". This rejection applies to independent claims 3 and 13 to the extent that they are drawn to the embodiments of claims 4 and 22, respectively. It is also noted that the recitation "pAK A" is interpreted as referencing the vector "pAKΔA". As discussed above, the specification does not provide a complete description of the vector "pAKΔA" and does not enable its construction. As a result, it is also unclear what actual structure is encompassed by the claims. It is noted that this rejection can also be overcome by providing a suitable deposit for patent purposes, as discussed above.

Claims 7-8, 20 and 25-26 are indefinite because it is unclear how the claims further limit the claimed invention. Particularly, independent claims 3 and 13 already require a particular modified mptpA gene defined by SEQ ID NO: 15, which includes an "internal region" substituted with a hygromycin resistance marker gene. Thus, clarification of the inventions of claims 7-8 and 20 is required, as it appears that the dependent claims 7-8 and 20 may not be further limiting of the claims from which they depend. Further, claims 25-26 are unclear to the extent that hygromycin is not required, as the construct of SEQ ID NO: 15 contains a hygromycin marker. (It is noted that it appears that the instantly rejected claims may have previously depended from broader independent claims).

Regarding claims 8 and 20, the term "preferably" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05.

Claim 11 is indefinite over the recitation of the term “isolated nucleotide sequence” in the claim. This term is not defined in the specification, and it is unclear whether the claim actually requires an isolated nucleic acid molecule, or whether the claim is intended to in fact embrace a “sequence” (i.e., to embrace information rather than a nucleic acid product). Clarification is required.

Claims 13-16, 18, 20-22, and 24-26 are indefinite over the recitation of the limitation “the primary recombinant mycobacterium strain of step (i)” in step (j) of claim 13. Step (i) does not in fact recite a single strain but rather multiple “strains”. It is therefore not clear whether step (j) requires the multiple strains of step (i), or whether it embraces, e.g., any individual strain selected from those strains (or a particular such strain). Accordingly, the metes and bounds of the claims are not clear. Dependent claims 25 and 26 are additionally unclear for the same reasons as the claims reference a single individual strain when the independent claim recites multiple “strains”.

Claims 13-16, 18, 20-22, and 24-26 are also unclear over the language of step (l) reciting “to obtain a mycobacterium strain…which shows defective growth in activated macrophages and animals”. It is not clear whether this language actually requires one to determine that such “defective growth” occurs, or whether strains prepared in accordance with the steps of the claim and harboring the “modified gene” in step (l) are presumed to possess this property. Accordingly, it is not clear from the language of the

claims what actual steps are or are not required by the claims.

Claim 27 is indefinite over the recitation of the term “primer sequence” in the claim. This term is not defined in the specification, and it is unclear whether the claim actually requires a primer (i.e., an oligonucleotide usable in, e.g., PCR amplification), or whether the claim is intended to in fact embrace a “sequence” (i.e., to embrace information rather than a nucleic acid product). Clarification is required.

Claim 27 is also indefinite over the recitation of the language “primer sequence adapted for amplification of mptpA gene selected from any of SEQ ID No. 1 to 4 along with its flanking regions.” The specification does not provide any kind of definition or clear guidance with regard to what types of adaptations/modifications may be encompassed by the language “adapted for amplification of mptpA gene,” or with regard to the scope and meaning of the term “flanking regions” as it is employed in the claim. Additionally, the terms “adapted” and “flanking regions” are general and imprecise terms, such that the prior art cannot be relied upon for guidance that is sufficiently specific to allow one of skill in the art to ascertain one types of structures/sequences are or are not embraced by the claims. More particularly, the extent to which a primer could be modified and still be embraced by the claim, and additionally the amount of sequence that would be considered "flanking" with respect to SEQ ID NOS 1-4 (and thus embraced by applicant’s claim language), would not be clear to one of skill in the art. Accordingly, the metes and bounds of the claim are not clear.

Claim Rejections - 35 USC § 101

17. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 11 and 27 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

As noted above in rejections under 35 USC 112, second paragraph, each of the claims appear to potentially embrace sequence information itself (as opposed to, e.g., isolated nucleic acid products having or consisting of a specific sequence of nucleotides). The isolated nucleic acid molecules/primers embraced by claims 11 and 27 are considered patent-eligible; however, the claims as presently written also appear to embrace sequence information, which is not among the categories of invention embraced by 35 USC 101. Accordingly, as the claims embrace both statutory and non-statutory embodiments, they must be rejected under 35 USC 101. This rejection may readily be overcome by amending claim 11 to recite, e.g., an isolated nucleic acid (rather than a "nucleotide sequence"), and claim 27 to recite a primer (rather than a "primer sequence").

Claim Rejections - 35 USC § 102

18. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

19. Claim 27 is rejected under 35 U.S.C. 102(b) as being anticipated by Ullrich et al (WO 01/81422 A1 [1 Nov 2001]).

The claim is drawn to a "primer sequence adapted for amplification of mptpA gene selected from any of SEQ ID No. 1 to 4 along with its flanking regions". Thus, the claim broadly encompasses any "primer sequence" that has been "adapted for amplification of mptpA gene" and which is selected is "selected from any of SEQ ID No.: 1 to 4 along with its flanking regions".

Ullrich et al disclose 2 primers employed in cloning mptpA (see, e.g., page 12, lines 15-18). The primers of Ullrich et al correspond to the 5' and 3' ends of the 492 base pair mptpA gene depicted by Ullrich et al as SEQ ID NO: 1 (see again page 12, as well as the Sequence Listing, noting that Ullrich et al's first primer targets the first 27 nucleotides of SEQ ID NO: 1, and that Ullrich et al's second primer targets the last 26 nucleotides of SEQ ID NO: 1). The mptpA sequences of instant SEQ ID NOs 2 and 3 are located within SEQ ID NO: 1 of Ullrich et al; note that instant SEQ ID NO: 2 contains a 23 nucleotide sequence that is the reverse complement of nucleotides 165-189 of SEQ ID NO: 1 of Ullrich et al, and that instant SEQ ID NO: 3 contains a 23 nucleotide sequence that is identical to nucleotides 278-301 of SEQ ID NO: 1 of Ullrich et al (see alignments at the end of this Office action). Thus, each of the primers of Ullrich et al meet each of the requirements of the claim, as the primers are a) "adapted for amplification of *mptpA* gene," and b) selected from "flanking regions" of "any of SEQ ID No. 1 to 4" (as the alignments depicted below demonstrate that the primers of Ullrich et al target/occur in regions that flank applicant's SEQ ID NOs 2 and 3). Accordingly, Ullrich et al anticipate the claimed invention.

Allowable Subject Matter

20. Although independent claims 1 and 3 are objected to/rejected for the reasons given above, it is noted that the prior art does not teach or suggest a mutant strain of mycobacterium or a vector comprising a modified *mptpA* gene having SEQ ID NO: 15. The closest prior art reference, Cowley et al (Research in Microbiology 153:233-241 [March 2002]), teaches mptpA gene fusions with green fluorescent protein that also employ a hygromycin resistance marker (see entire reference); however, the particular construct of SEQ ID NO: 15 is not suggested by the prior art. It is also noted that the prior art does not teach or suggest a primer consisting of SEQ ID NO: 1, SEQ ID NO: 2, SEQ ID NO: 3 and/or SEQ ID NO: 4.

Drawings

21. The drawings are objected to because in Figure 1, the 3 panels described in the specification ((A)-(C); see page 6) are not correctly identified in the figure itself. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the

remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Diana B. Johannsen whose telephone number is 571/272-0744. The examiner can normally be reached on Monday-Friday, 8:30 am-2:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Nguyen can be reached at 571/272-0731. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Diana B. Johannsen/
Primary Examiner, Art Unit 1634

SEQUENCE ALIGNMENTS:

Alignment of instant SEQ ID NO: 2 with SEQ ID NO: 1 of Ullrich et al

```
RESULT 3
AAD23907/c
ID   AAD23907 standard; DNA; 492 BP.
XX
AC   AAD23907;
XX
DT   12-MAR-2002  (first entry)
XX
DE   Mycobacterium tuberculosis secretory tyrosine phosphatase, MptpA DNA.
XX
KW   Mycobacteria; secretory protein tyrosine phosphatase; PTP; tuberculosis;
KW   MptpA; ds.
XX
OS   Mycobacterium tuberculosis.
XX
FH   Key             Location/Qualifiers
FT   CDS             1. .492
FT                   /*tag=  a
FT                   /product= "Secretory protein tyrosine phosphatase MptpA"
FT                   /transl_except= (pos:1. .3, aa:Met)
FT                   /note= "This translation exception occurs while decoding
FT                   the alternative version of the MptpA protein shown in
FT                   Fig. 4a of the specification (AAE14358). According to
the
FT                   specification GTG serves as the start codon"
XX
PN   WO200181422-A1.
XX
PD   01-NOV-2001.
XX
PF   19-APR-2001; 2001WO-EP004463.
XX
PR   20-APR-2000; 2000EP-00108682.
XX
PA   (PLAC ) MAX PLANCK GES FOERDERUNG WISSENSCHAFTEN.
XX
PI   Ullrich A,  Koul A;
XX
DR   WPI; 2002-062028/08.
DR   P-PSDB; AAE14357, AAE14358.
XX
PT   Composition for inhibiting or preventing mycobacterial growth, comprises
PT   inhibitor of secretory tyrosine phosphatases obtained from mycobacteria.
```

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XX
PS   Claim 4; Page 42-43; 51pp; English.
XX
CC   The invention relates to a composition capable of inhibiting or
CC   preventing mycobacterial growth, comprising an inhibitor of secretory
CC   protein tyrosine phosphatases (PTPs) from mycobacteria as an active
CC   agent. The composition is useful for treating or preventing
mycobacterial
CC   diseases e.g. tuberculosis. The present sequence is secretory tyrosine
CC   phosphatase MptpA DNA from Mycobacterium tuberculosis. The MptpA
tyrosine
CC   phosphatase has substrate specificity for phosphotyrosine residues and
CC   lacks signal peptide
XX
SQ   Sequence 492 BP; 83 A; 163 C; 162 G; 84 T; 0 U; 0 Other;

  Query Match             73.1%;  Score 23.4;  DB 1;  Length 492;
  Best Local Similarity   96.0%;
  Matches   24;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps
0;

Qy          8 TGGCAACACCCCGGCCGCCCGCTCG 32
              | ||||||||||||||||||||||||
Db        189 TCGCAACACCCCGGCCGCCCGCTCG 165
```

Sequence alignment of instant SEQ ID NO: 3 with SEQ ID NO: 1 of Ullrich et al

```
RESULT 4
AAD23907
ID   AAD23907 standard; DNA; 492 BP.
XX
AC   AAD23907;
XX
DT   12-MAR-2002  (first entry)
XX
DE   Mycobacterium tuberculosis secretory tyrosine phosphatase, MptpA DNA.
XX
KW   Mycobacteria; secretory protein tyrosine phosphatase; PTP; tuberculosis;
KW   MptpA; ds.
XX
OS   Mycobacterium tuberculosis.
XX
FH   Key             Location/Qualifiers
FT   CDS             1. .492
FT                   /*tag=  a
FT                   /product= "Secretory protein tyrosine phosphatase MptpA"
FT                   /transl_except= (pos:1. .3, aa:Met)
FT                   /note= "This translation exception occurs while decoding
FT                   the alternative version of the MptpA protein shown in
FT                   Fig. 4a of the specification (AAE14358). According to
the
FT                   specification GTG serves as the start codon"
XX
```

PN WO200181422-A1.
XX
PD 01-NOV-2001.
XX
PF 19-APR-2001; 2001WO-EP004463.
XX
PR 20-APR-2000; 2000EP-00108682.
XX
PA (PLAC) MAX PLANCK GES FOERDERUNG WISSENSCHAFTEN.
XX
PI Ullrich A, Koul A;
XX
DR WPI; 2002-062028/08.
DR P-PSDB; AAE14357, AAE14358.
XX
PT Composition for inhibiting or preventing mycobacterial growth, comprises
PT inhibitor of secretory tyrosine phosphatases obtained from mycobacteria.
XX
PS Claim 4; Page 42-43; 51pp; English.
XX
CC The invention relates to a composition capable of inhibiting or
CC preventing mycobacterial growth, comprising an inhibitor of secretory
CC protein tyrosine phosphatases (PTPs) from mycobacteria as an active
CC agent. The composition is useful for treating or preventing
mycobacterial
CC diseases e.g. tuberculosis. The present sequence is secretory tyrosine
CC phosphatase MptpA DNA from Mycobacterium tuberculosis. The MptpA
tyrosine
CC phosphatase has substrate specificity for phosphotyrosine residues and
CC lacks signal peptide
XX
SQ Sequence 492 BP; 83 A; 163 C; 162 G; 84 T; 0 U; 0 Other;

Query Match 72.7%; Score 24; DB 1; Length 492;
Best Local Similarity 100.0%;
Matches 24; Conservative 0; Mismatches 0; Indels 0; Gaps
0;

Qy 10 ACGCTCGGCTGTTGCGGCAGCTCG 33
||||||||||||||||||||||||
Db 278 ACGCTCGGCTGTTGCGGCAGCTCG 301